SANYO

INSTRUCTION MANUAL

Dual Camera

Xacti **HD** HIGH DEFINITION

VPC-PD1EX
VPC-PD2
VPC-PD1GX
VPC-PD1PX
VPC-PD1TA

SD XC™

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

Important note

This manual explains how to safely operate the VPC-PD1EX, VPC-PD2, VPC-PD1GX, VPC-PD1PX and VPC-PD1TA.
Any information regarding only one of these products will be labeled as such.

Please read these instructions carefully before using the camera.
Make sure to read and understand the separate booklet "SAFETY MANUAL".
Keep this manual in a safe place for later reference.

Warning
TO PREVENT THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT
EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE

■FOR AMERICAN USERS

The following advisory is included in accordance with the laws of the State of
California (USA):
WARNING:
This product contains chemicals, including lead, known to the State of
California to cause cancer, birth defects or other reproductive harm. **Wash
hands after handling.**

• This equipment has been tested and found to comply with the limits for a
  Class B digital device, pursuant to Part 15 of the FCC Rules. These limits
  are designed to provide reasonable protection against harmful interference
  in a residential installation. This equipment generates, uses and can
  radiate radio frequency energy and, if not installed and used in accordance
  with the instructions, may cause harmful interference to radio
  communications. However, there is no guarantee that interference will not
  occur in a particular installation. If this equipment does cause harmful
  interference to radio or television reception, which can be determined by
  turning the equipment off and on, the user is encouraged to try to correct
  the interference by one or more of the following measures:
  ・ Reorient or relocate the receiving antenna.
  ・ Increase the separation between the equipment and receiver.
  ・ Connect the equipment into an outlet on a circuit different from that to
    which the receiver is connected.
  ・ Consult the dealer or an experienced radio/TV technician for help.
• Changes or modifications not expressly approved by the party responsible
  for compliance could void the user's authority to operate the equipment.

Declaration of Conformity

Model number: VPC-PD2
Trade Name: SANYO
Responsible party: SANYO North America Corporation
Address: 21605 Plummer Street, Chatsworth, California 91311
Telephone No.: (818) 998-7322
This device complies with Part 15 of the FCC Rules. Operation is subject
to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including
    interference that may cause undesired operation.

■FOR CANADIAN USERS

- This Class B digital apparatus complies with Canadian ICES-003.

■FOR EU USERS

The symbol mark and recycling systems described below apply to EU countries and do not apply to countries in other areas of the world.
Your SANYO product is designed and manufactured with high quality materials and components which can be recycled and/or reused.
The symbol mark means that electrical and electronic equipment, batteries and accumulators, at their end-of-life, should be disposed of separately from your household waste.

Note:
If a chemical symbol is printed beneath the symbol mark, this chemical symbol means that the battery or accumulator contains a heavy metal at a certain concentration. This will be indicated as follows: Hg: mercury, Cd: cadmium, Pb: lead
In the European Union there are separate collection systems for used electrical and electronic equipment, batteries and accumulators.
Please, dispose of them correctly at your local community waste collection/recycling centre.
Please, help us to conserve the environment we live in!

SANYO Sales & Marketing Europe GmbH
Stahlgruberring 4, D-81829 München, Germany

SANYO Electric Co., Ltd.
1-1, Sanyo-cho, Daito City, Osaka 574-8534, Japan

■FOR RUSSIAN USERS

This product is certified by an official certification company which is authorized by the Russian Federation.

АЯ46

HOW TO READ THIS MANUAL

Symbols used in this manual

HINT   Points giving some extended instructions or special points to pay attention to.

CAUTION Points that require special attention.

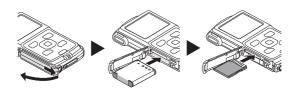**(page xx)** Refer to the page indicated for detailed information.
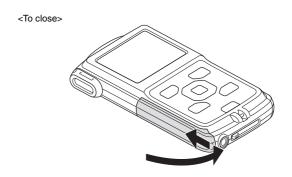
SHOOT, PLAY BACK AND SAVE
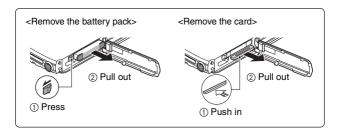
PREPARE THE BATTERY PACK AND CARD

Installing the battery pack and card

Install the card and the supplied battery pack.

- The card is not an included accessory. Please purchase a commercially sold card.
- The camera has an internal memory, which means that you can record and save the recorded data even if no card is installed.
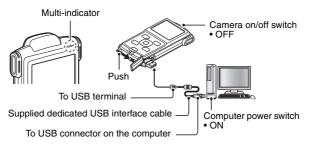
<To close>

<Remove the battery pack>   <Remove the card>

② Pull out   ② Pull out

① Press   ① Push in

Charging the battery pack

1 Press the ON/OFF button to turn off the camera.
   • It is not possible to charge the battery pack while the camera is on.

2 Use the dedicated USB interface cable (supplied) to connect the camera to a computer.

3 Turn on the computer.
   • Charging begins.
   • During charging, the multi-indicator is lit red.
   • When charging is completed, the indicator turns off.
   • The charging time is approx. 180 minutes.

Multi-indicator

Camera on/off switch
• OFF

Push

To USB terminal

Supplied dedicated USB interface cable

To USB connector on the computer

Computer power switch
• ON

CAUTION
During charging...
- Do not turn on the camera while the battery pack is charging. It is not possible to charge the battery pack while the camera is on.
- Do not turn off the computer while the battery pack is charging. It is not possible to charge the battery pack while the computer is off.
- With certain computers, it may be possible to charge the battery pack even when the computer is turned off.

Insert and pull out the cable and USB plug carefully
- When connecting the cables, make sure that the plugs are correctly oriented and that they match the shapes of the terminal sockets on the devices. Push the plugs in straight when connecting them. If undue force is used to connect a cable, it may permanently damage the terminal or the camera.
- If excessive force is used to pull the USB plug, it may damage the cable and/or connector.

Shooting

1 Press the ON/OFF button for at least 1 second to turn the camera on.

- If the screen to set the date and time appears, press the [$\frac{4}{10}$] button to cancel it.
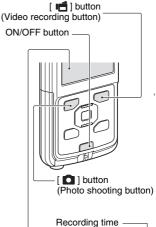 **For how to set the date and time, see page 14.**

2 Record.

To record a video clip:
- Press the [ ] button to begin recording a video clip.
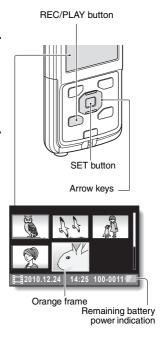- Press the [ ] button again to end the recording.

To take a photo:
- Press the [ ] button.
- A still image is captured.

[ ] button
(Video recording button)

ON/OFF button

[ ] button
(Photo shooting button)

Recording time

Available recording time remaining

Playback

1 Press the REC/PLAY button.
- The display changes to the Playback Screen.

2 Select the image to play back.
- Use the arrow keys to move the orange frame to the image you wish to play back.
- The image information for the framed image is shown in the bottom part of the monitor.

3 Press the SET button.
- The file you selected is played back.

<To return to the recording mode>
- Press the REC/PLAY button.

REC/PLAY button

SET button

Arrow keys

2010.12.24 14:25 100-0011

Orange frame

Remaining battery power indication

Deleting files

1 On the screen in step 2, move the orange frame to the file you wish to delete, and press the [$\frac{1}{2}$/🗑] button.

2 Select "DELETE SINGLE", and press the SET button.
· If you press [◄] or [►], the screen to delete a different file will appear.

3 When you are finished deleting files, press the [$\frac{1}{2}$/🗑] button.
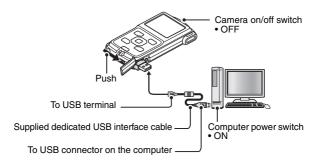
When you are finished using the camera...

Press the ON/OFF button for at least 1 second to turn the camera off.

Copy data from your camera to the computer

Connect your camera to a computer, and copy the desired data to the computer.

1 Turn on the computer, and use the supplied dedicated USB interface cable to connect your camera to the computer.
 · Connect the cable between the camera's USB terminal and the computer's USB connector.

Camera on/off switch
· OFF

Push

To USB terminal

Supplied dedicated USB interface cable

Computer power switch
· ON

To USB connector on the computer
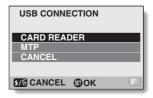
<Insert and pull out the cable and USB plug carefully>
- When connecting the cables, make sure that the plugs are correctly oriented and that they match the shapes of the terminal sockets on the devices. Push the plugs in straight when connecting them. If undue force is used to connect a cable, it may permanently damage the terminal or the camera.
- If excessive force is used to pull the USB plug, it may damage the cable and/or connector.

2 Turn on the camera (page 11).

- The USB Connection Screen appears on the camera's monitor.

```
USB CONNECTION

CARD READER
MTP
CANCEL

⚡/🗑 CANCEL   SET OK
```

3 Select "CARD READER", and press the SET button.

- The window for automatic playback of XACTI_INT (internal memory) and XACTI (card) opens.
- If the Access Menu appears, click the Access Menu [EXIT] button.

4 In the automatic playback window, click [Open folder and display files].

- To copy files from the internal memory: Click on the XACTI_INT [Open folder and display files].
- To copy files from the card: Click on the XACTI [Open folder and display files] .

5 Copy data from your camera to a computer.

- Copy files to a computer.

CAUTION
For VPC-PD1EX

- It is not possible to copy files from the computer side (a hard disk, etc.) to the camera's internal memory or installed card.

Uploading camera files to a file-sharing website

- Your camera's internal memory contains the Xacti Simple Uploader application with which you can upload camera files to a file-sharing website.
- For information on how to use Xacti Simple Uploader, please refer to the Xacti Simple Uploader user's manual, which can be obtained from the SANYO website.

<How to launch Xacti Simple Uploader>
① Connect your camera to a computer.
② Turn on the computer and the camera.
③ On the USB Connection Screen, select "CARD READER", and press the SET button.
   - The window for automatic playback of XACTI_INT (internal memory) and XACTI (card) opens, and the Access Menu appears.
   - If the Access Menu does not appear, double-click "Autorun.Exe" in XACTI_INT.
④ In the Access Menu, click on [Install Xacti Simple Uploader].
   - The Xacti Simple Uploader installation begins.
   - Follow the instructions of the installation wizard to complete the installation.

<How to obtain the manual>
   - On the Xacti Simple Uploader screen, click the [?] icon.

Software operating environment

	for Windows®		for Mac OS
	Video playback *1 Xacti Simple Uploader *2	Xacti Simple Uploader *2	Video playback
Operating System *3	Windows®7 Windows®Vista Windows®XP with standard USB port	Windows®7 Windows®Vista Windows®XP with standard USB port	Mac OS X 10.3.9 Mac OS X 10.4.9 or later with standard USB port
CPU	Core 2 Duo E4400 2.0GHz or faster Core Duo T2600 2.16GHz or faster Athlon X2 4600+ 2.4GHz or faster	Celeron, Pentium4 1GHz or faster Core Duo, Core 2 Duo or faster	Core 2 Duo or faster
RAM	1GB or greater (Recommended 2GB or greater)	1GB or greater (Recommended 2GB or greater)	1GB or greater (Recommended 2GB or greater)
Video RAM	128MB or greater (Recommended 256MB or greater)	—	256MB or greater
Others	—	.NET Framework 3.5 SP1 or later	—

*1   In some cases, images may not show correctly on your computer, depending on your computer's operating environment.
*2   It is necessary that your computer be connected to the Internet. To upload images, please establish an account with a file-sharing service (YouTube, for example).
*3   Pre-installed model only.

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Mac OS is a trademark of Apple Inc., registered in the U.S. and other countries.
SDXC is a trademark of SD-3C,LLC. All trademarks mentioned are the properties of their respective owners.

Dismounting the camera

CAUTION
- To disconnect your camera, be sure to follow the procedure below. Failure to follow this procedure may cause faulty operation of your computer or corrupt the files in your camera.

1 Left-click on the icon for safely removing hardware in the task tray.
- A list appears showing the devices connected to the computer's USB connector.

2 Left-click on the camera drive.
- The camera can now be disconnected.

CONTENTS

1   English

■ APPENDICES

CHECKING THE INCLUDED ACCESSORIES

- **Li-ion battery pack: 1**

- **Dedicated USB interface cable (page v, x): 1**

- **SAFETY MANUAL (safety precautions booklet) Please read this booklet carefully before using the camera.**

- **QUICK GUIDE**

- **Obtaining the PDF instruction manual and cautions**

How to use the accessories

∎ **Handstrap (Please purchase a commercially available handstrap.)**
● To avoid dropping the camera, it is recommended that you attach a handstrap.

ABOUT THE CARD

Media cards that can be used with this camera

The type of card that can be inserted into and used with this camera is:
- SD Memory Card
- SDHC Memory Card
- SDXC Memory Card
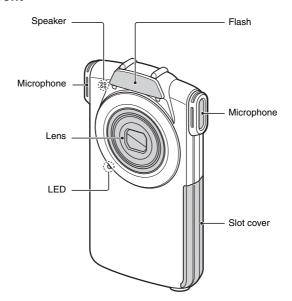
What "card" means in this manual
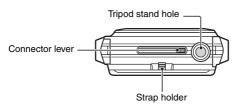
- In this manual, SD Memory Cards, SDHC Memory Cards and SDXC Memory Cards that can be used in this camera are referred to as "card".

PARTS NAMES

Front

Speaker

Flash

Microphone

Microphone

Lens

LED

Slot cover

Bottom

Tripod stand hole

Connector lever

Strap holder

Rear

Multi-indicator

Monitor

SET button

[📷] button
(Photo shooting button)

[🎥] button
(Video recording button)

Arrow keys

REC/PLAY button

[🗲/🗑] button

ON/OFF button

ABOUT THE BATTERY AND THE CARD

About recharging

Recharging takes place only when the camera is turned off, or when the power save function or the sleep function has been activated. Recharging does not take place when the camera is in the recording mode or playback mode.

CAUTION
Do not charge the battery pack immediately after the camera has been in continuous use for a long time
- The battery pack becomes hot when the camera is used continuously for a long time. If you attempt to charge the battery pack in this state, the multi-indicator may flash red and it may not be possible to charge the battery pack. Wait until the battery pack has cooled down before attempting to charge it.

Does the battery pack appear swollen?
- The lithium-ion battery used in this camera may expand slightly when stored in a hot environment or repeatedly used, but this is not a safety hazard. However, a battery that is difficult to insert because it has become swollen may then be impossible to extract from the battery compartment. In this case, please discontinue its use and replace it with a new battery.

Do not use the battery with the outer covering or label removed
- Doing so may result in malfunction.

HINT
About the internal backup battery
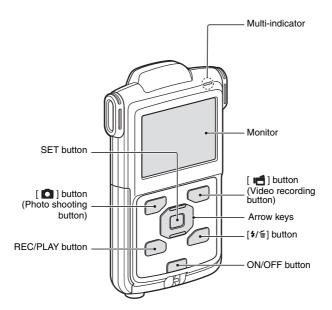- This camera's internal battery serves to maintain the date and time settings, as well as the shooting settings. The backup battery will be fully charged when the battery pack is kept in the camera continuously for about 2 days. In the fully charged state, the backup battery will maintain the camera settings for about 7 days.

When not using the camera for a long time, remove the battery pack
- A small amount of power is still used even if the camera is turned off, and it is therefore recommended that the battery pack be removed from the camera if it is not going to be used for a long time. Note that when the battery pack is removed for a long period, the time and date settings may be cleared. Before using your camera again, be sure to confirm that the camera settings are correct.

English **8**

Recharging when connected to the USB terminal
- The battery can be recharged while the camera is connected to a computer.
- Note, however, that the time it takes to recharge will differ depending on the camera's operating condition.
- Connect the dedicated USB interface cable to the USB connector on your computer. Do not connect it to the USB connector on the monitor or the keyboard, or to the USB hub.
- If the camera is not going to be used for an extended period of time, please disconnect the dedicated USB interface cable from the camera.

About the temperature alert icon 🌡⚠

During camera use, if the temperature of the battery or inside the camera (excluding the battery) rises, a temperature alert icon 🌡⚠ will appear as described below.

■ **When the battery or internal camera (excluding battery) temperature rises during use**
- During camera use, if the temperature of the battery or inside the camera (excluding the battery) rises, a 🌡⚠ icon lights on the monitor. It is still possible to record and play back even when the 🌡⚠ icon is lit; however it is advised that you discontinue use as soon as possible and turn the camera off.
- If the temperature rises further, the 🌡⚠ icon will start to flash, and the camera will turn off automatically.
  The camera cannot be turned on until the temperature has dropped (or as long as the 🌡⚠ icon remains flashing). Please wait until the temperature has dropped before resuming use.
- During video recording, a countdown indicator will show the time starting about 15 seconds before shutdown. When the indicator shows 0 seconds, recording stops.
- If the camera is turned off while the temperature is high (that is, while the 🌡⚠ icon is flashing), it cannot be turned on again until the temperature has dropped (or as long as the 🌡⚠ icon remains flashing).

To format a card

1 **Insert the card in the camera, and press the ON/OFF button (pages iv and 11).**

2 **Press and hold the [$\frac{4}{m}$] button for at least 1 second.**

3 **Select "FORMAT" and press the SET button.**
  · The Format Screen appears. Follow the instructions on the screen to format the card.
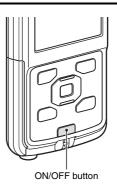
Shooting without a card installed

· When a card is installed, images are recorded to and played back from the card. When no card is installed, images are recorded to and played back from the camera's internal memory. When the camera is turned on with no card installed, the internal memory icon 📷 is shown on the monitor to let you know that the images you capture will be saved to the camera's internal memory.

TURNING THE CAMERA ON AND OFF

Turning on the camera

1 **Press the ON/OFF button for at least 1 second.**

ON/OFF button

Turning off the camera

1 **Press the ON/OFF button for at least 1 second.**
   - The camera turns off.

HINT

To adjust the operation sounds
- If you turn on the camera by pressing the ON/OFF button while holding down the [▲] arrow key, the screen to change the operation sounds will appear.

Turning on the camera when the power save (sleep) mode is active

In order to preserve battery pack power, the power save (sleep) function will automatically turn off the camera after about 2 minutes of no use during shooting, or about 2 minutes of no use during playback.

- When the power save mode is active, you can restore the power by any of the following methods:
  - **Press the ON/OFF button.**
  - **Press the SET button.**

CAUTION
If the ⊘? icon appears...
- When a picture is taken, the date and time it was captured are recorded with it. If the date and time settings have not been completed (page 14), the date and time cannot be recorded with the captured images. For this reason, immediately after the camera is turned on, the "Set date and time" reminder briefly appears, after which the ⊘? icon is shown on the Recording Screen. To have the date and time recorded with the images, please complete this setting before capturing images.
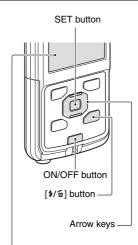
<Caution>
- Due to the characteristics of the camera, the outer surface may become warm during use, but this does not indicate a malfunction.
- If the camera starts to feel uncomfortably hot during use, you might temporarily discontinue use until it cools down, or try holding it in your other hand for a while.
  Please use a tripod or other support when using the camera for a long time.

DATE AND TIME SETTING

When the camera is first turned on after purchase, the Clock Set Screen appears. Proceed from step **4** to set the date and time.

1 Press the ON/OFF button to turn on the camera.

2 Press and hold the [4/⌫] button for at least 1 second.
- The Setup Menu appears.

3 Use the [▲] and [▼] arrow keys to select "CLOCK SET", and press the SET button.
- The Clock Set Screen appears.

4 Set the date and time.
- To select the desired setting: Press the [◄] and [►] arrow keys.
- To change the assigned value: Press the [▲] and [▼] arrow keys.

5 Press the SET button.
- Assign the desired value to each setting.

6 Press the [4/⌫] button.
- The date and time settings are completed, and you are returned to the Setup Menu.

SET button

ON/OFF button

[4/⌫] button

Arrow keys

CLOCK SET		
DATE	◄	**2010**/07/01 ►
TIME		00 : 00
DISP		D / M / Y
4/⌫ ↩		🔲 OK

English **14**

HINT
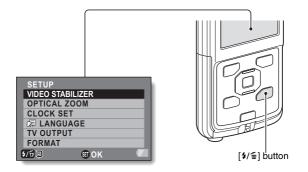
● Under normal conditions, while the battery pack is being replaced, an internal battery will maintain the date and time settings. However, there is a small chance the settings may be lost (the backup will last for about 7 days). It is recommended to check that the date and time settings are still correct after replacing the battery pack and before shooting or recording of any type (follow step **1**).

To correct the date and time settings

① Turn on the camera.
② Press and hold the [♭/⊞] button for at least 1 second.
③ Select "CLOCK SET" and press the SET button.
  ・ The screen to set the date and time appears.
  ・ The current date and time settings are shown.
④ Select the line you wish to change, and make the correction.
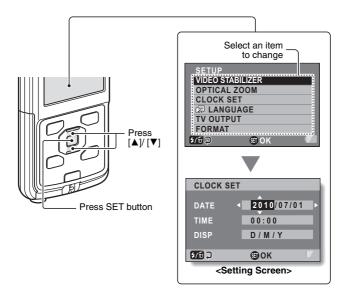
ACCESSING THE SETUP MENU SCREEN

1 Turn on the camera (page 11).

2 Press and hold the [$/m] button for at least 1 second.
  · The Setup Menu appears.
  · To cancel the Setup Menu, press the [$/m] button.

SETUP
VIDEO STABILIZER
OPTICAL ZOOM
CLOCK SET
LANGUAGE
TV OUTPUT
FORMAT
$/m   SET OK

[$/m] button
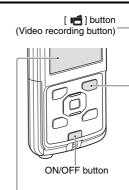
3 **Press [▲] or [▼] to select the item you wish to change, and press the SET button.**
- The Setting Screen for the selected item appears.
- To return to the Setup Menu, press the [⚡/🗑] button.

Select an item to change

SETUP
VIDEO STABILIZER
OPTICAL ZOOM
CLOCK SET
🈁 **LANGUAGE**
TV OUTPUT
FORMAT
⚡/🗑 ➡   **SET OK**

Press [▲]/ [▼]

Press SET button

CLOCK SET

DATE   ◄ **2010**/**07/01** ►

TIME   **00:00**

DISP   **D / M / Y**

⚡/🗑 ➡   **SET OK**

<Setting Screen>

VIDEO CLIP RECORDING

1 Turn on the camera (page 11).

2 Press the [🎥] button.
- Recording begins.
- It is not necessary to keep the [🎥] button pressed while recording.
- When the remaining recording time available for the currently recording clip becomes little, a countdown of the remaining recording time appears on the display.

3 End the recording.
- Press the [🎥] button again to stop recording.

[🎥] button
(Video recording button)

ON/OFF button

Recording time

● REC 00:09

Available recording time remaining

SHOOTING

English **18**

HINT

To change the video settings

① With the Recording Screen displayed, press the [▶] arrow key.
  • The screen to change the video settings appears.
  • To return to the Recording Screen without changing the settings, press the [ϟ/🗑] button.

Full-SHQ HD-HR HD-SHQ TV-SHQ

VIDEO
1920x1080 30fps SHQ

② Use the [◀] and [▶] arrow keys to select a setting, and press the SET button.
  • The video settings are changed, and you are returned to the recording screen.
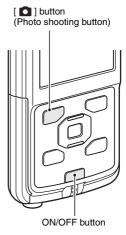
SHOOTING SINGLE SHOTS

Capture a still image (single-shot).

1 Turn on the camera (page 11).

2 Press the [🔲] button.
　① **Press the [🔲] button halfway.**
　　• The autofocus operates, and the image is focused (focus lock).
　② **Continue to gently press the [🔲] button all the way.**
　　• The shutter releases and the image is captured.
　　• You can view the captured image on the monitor by keeping the [🔲] button depressed when you capture the image.

[🔲] button
(Photo shooting button)

ON/OFF button

SHOOTING

English **20**

To change the photo settings

① With the recording screen displayed, press the [◄] arrow key.
  • The screen to change the photo settings appears.
  • To return to the recording screen without changing the settings, press the [$/🗑] button.

12M 10M 5M 2M 2M☰

PHOTO
4000x3000

② Use the [◄] and [►] arrow keys to select a setting, and press the SET button.
  • The photo settings are changed, and you are returned to the recording screen.

To change the flash operation

① While the Recording Screen is shown, press the [$/🗑] button.
  • The screen to select the flash operation appears.
  • To return to the Recording Screen without changing the setting, press the [$/🗑] button.

$A $ ↘ $⊚

FLASH
AUTO

② Use the [◄] and [►] arrow keys to select the desired setting, and press the SET button.
  • The flash operation setting is modified, and you are returned to the Recording Screen.

HINT
Did the Setup Menu appear?
• The Setup Menu appears when the [$/🗑] button is kept pressed for at least 1 second.
• Press the [$/🗑] button to cancel the Setup Menu, and then briefly press the [$/🗑] button again.
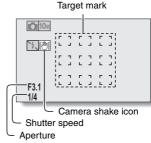
HINT

What is the camera focusing on?

● A target mark ⊏⊐ on the monitor
  shows the area the camera is
  focusing on.
● The camera automatically
  determines the correct focus by
  measuring from 9 different focus
  points within the shooting area. If the
  target mark is at a position that is
  different from the point you wish to
  focus on, you can refocus, for
  example, by changing the shooting
  angle.
● The large target mark appears when
  the camera focuses on a wide area
  in the center of the screen.

Target mark

Camera shake icon

Shutter speed

Aperture

If the camera shake icon 📳 appears...
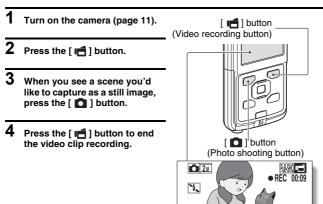
● During still image shooting, if the shutter speed is slow and the possibility
  that the image may be blurred due to camera shake becomes high, the
  camera shake icon may appear on the monitor. In this case, use a tripod to
  stabilize the camera when shooting.

Does it seem to take a long time to save images?

● When shooting in dimly lit conditions, it may take some time to save the
  data to the card.

English **22**

SHOOT A STILL IMAGE WHILE RECORDING A VIDEO CLIP

You can capture a still image (a single-shot) while recording a video clip.

1 **Turn on the camera (page 11).**

2 **Press the [🎬] button.**

3 **When you see a scene you'd like to capture as a still image, press the [📷] button.**

4 **Press the [🎬] button to end the video clip recording.**

[🎬] button
(Video recording button)

[📷] button
(Photo shooting button)

📷 2ᴍ

🔅

ⒻᵤₗₗSₕ🇶

●REC 00:09

HINT
- When the remaining video recording time becomes approximately 30 seconds, it will no longer be possible to capture a still image while recording a video clip. The exact remaining recording time at which this occurs will differ depending on the subject and on the recording size, as well as on the video clip recording mode. If you intend to capture a still image while recording a video clip, it is suggested that you take note of the remaining video recording time.

About the recording size of still images
- The size of a still image captured during video clip recording depends on the video clip recording size.

Video clip recording size setting	Still image recording size
Full-SHQ	1920 × 1080 pixel
HD-HR	1280 × 720 pixel
HD-SHQ	1280 × 720 pixel
TV-SHQ	640 × 480 pixel

MACRO-PHOTOGRAPHY (ZOOM)

1 **Point the camera lens at the subject.**

2 **Press [▲] or [▼].**
[▲]: Zoom in on the subject.
[▼]: Zoom out.
· When the zoom switch is pushed, the zoom bar appears on the monitor.
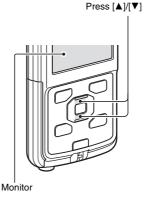
3 **Take the picture.**
For video clip recording, see page 18.
For shooting single shots, see page 20.

Press [▲]/[▼]

Monitor

SHOOTING WITH THE SELF-TIMER

1 While the Recording Screen is shown, press and hold the SET button for at least 1 second.

- The screen to select the self-timer operation appears.
- To return to the Recording Screen without changing the setting, press the [$\frac{1}{2}$/$\overline{\underline{m}}$] button.

2 Use the [◄] and [►] arrow keys to select the desired setting, and press the SET button.

- The self-timer operation setting is modified, and you are returned to the Recording Screen.
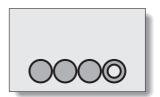
HINT

To pause or cancel the self-timer function...

● If the [◻] button or [⬛] button is pressed again before the shutter is released, the self-timer countdown temporarily stops. Press the [◻] button or [⬛] button one more time to restart the self-timer.

When $\boxed{\circlearrowright_{10}}$ is selected...

● When the [◻] button or [⬛] button is pressed, the multi-indicator will blink for about 10 seconds, and then the image is captured. Also, 4 seconds before the shutter releases, the indication shown in the illustration appears on the monitor.

● The LED next to the front lens begins blinking when the shutter button is pressed. About 4 seconds before the shutter opens, the LED begins to blink rapidly.

PLAYING BACK VIDEO CLIPS AND STILL IMAGES

1 Press the REC/PLAY button.
• The display changes to the Playback Screen.

REC/PLAY button

2 Select the image to play back.
• Use the arrow keys to move the orange frame to the image you wish to play back.
• The image information for the framed image is shown in the bottom part of the monitor.

3 Press the SET button.
• The file you selected is played back.
<To return to the recording mode>
• Press the REC/PLAY button.

SET button

Arrow keys

2010.12.24 14:25 100-0011

Orange frame
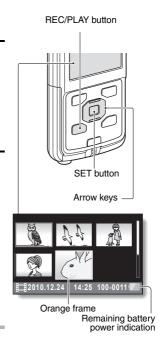
Remaining battery power indication

HINT
Slideshow playback
• In step 3, if you press the SET button for about 1 second or more, a slideshow playback will start.
• The slideshow playback will stop when any button is pressed.

27 English

Video clip playback operation

To do this...		Do this
Normal forward playback		Press the SET button.
Stop playback		During playback, press [▼].
Pause		During playback, press the SET button.
To play back one image at a time (single-frame step)	Forward playback	After pausing playback, press [▶].
	Reverse playback	After pausing playback, press [◀].
Slow playback	Forward playback	After pausing playback, press and hold [▶].
	Reverse playback	After pausing playback, press and hold [◀].
To accelerate playback	Forward playback	During forward playback, press [▶]. • The playback speed changes each time [▶] is pressed, as follows: Normal playback → 2× → 5× → 10× → 15× Press [◀] to resume normal playback speed.
	Reverse playback	During forward playback, press [◀]. • The playback speed changes each time [◀] is pressed, as follows: 15× ← 10× ← 5× ← 2× Press [▶] to resume normal playback speed.
Return to normal playback speed		Press the SET button.
Adjusting the volume		**Louder:** During playback, press [🔊]. **Softer:** During playback, press [🔇].

SHOOTING

HINT

If the ⊞ appears on the playback Screen...
- The ⊞ icon appears when playing back a file that was saved in segments.

English **28**

How to save one frame from a video clip as a still image

1 Play back the video clip. Pause the playback at the point you wish to "snap" a photo.

2 Press the [◯] button.

HINT
The file size for a video clip is very large
- Therefore, be aware that if the video clip is uploaded to a computer to be played back, the computer may not be able to play back the video fast enough, making it appear jerky. (The video will always be displayed properly on the camera monitor or a television.)
- Depending on the card, recording may end even before the possible recording time indicated.

CAUTION

During video clip playback, the sound of a motor is audible...

- During recording, the sound of the optical zoom movement or autofocus movement was recorded. This is not a malfunction.

If no audio is heard...

- The audio is not played back when the video clip is played back in the frame-by-frame, slow-motion, fast playback or reverse playback mode.

English **30**

CONNECTING TO A TV

By connecting the camera to a TV, you can play back the recorded files on the TV.

CAUTION
Insert and pull out the cable carefully
- When connecting the cables, make sure that the cable plugs are correctly oriented and that they match the shapes of the terminal sockets on the devices. Push the plugs in straight when connecting them. If undue force is used to connect a cable, it may permanently damage the connector pins in the terminal socket.
- Do not use excessive force when connecting and disconnecting cables.

About image output: The image output destination differs depending on the camera status.
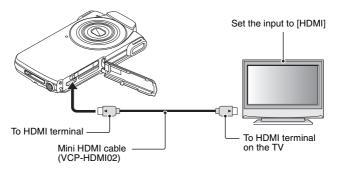
Connection cable	Image output destination	Recording mode Recording	Playback mode
HDMI cable*	Camera monitor	○	×
	TV	×	○

○: Images are output   ×: Images are not output

* When an HDMI cable is used to connect the camera to a TV, 1080p video mode images are output as 1080i images.
  Separately sold or commercially available mini-HDMI cable.

Connecting to the HDMI terminal

Use a separately sold or commercially available mini-HDMI cable to connect to a TV.

Set the input to [HDMI]

To HDMI terminal

Mini HDMI cable
(VCP-HDMI02)

To HDMI terminal
on the TV

English **32**

PLAYING BACK ON A TV

- After connecting the camera to the television, switch the TV input to the terminal to which the camera is connected.
- The playback method is the same as when viewing images on the camera's monitor. (Use the TV controls to adjust the volume.)
- The same playback procedure as when playing back with the camera is used to play back audio recordings as well.

CAUTION
Insert and pull out the cable carefully
- When connecting the cables, make sure that the cable plugs are correctly oriented and that they match the shapes of the terminal sockets on the devices. Push the plugs in straight when connecting them. If undue force is used to connect a cable, it may permanently damage the connector pins in the terminal socket.
- Do not use excessive force when connecting and disconnecting cables.

FREQUENTLY ASKED QUESTIONS

If you have a question about the camera operation, you might find the answer in this compilation of frequently asked questions.

	Question	Answer	Action
Power	Why doesn't the power turn on?	Due to cold temperatures, the battery pack temporarily lost its power.	Place the camera in your pocket to warm it up before using it.
	Why is the battery pack consumed so quickly even after it was fully recharged?	The ambient temperature is very low.	Keep the battery pack in an environment of 10 to 40 °C (50 to 104 °F).
		The battery pack life has expired.	If a battery becomes depleted quickly even after it was sufficiently charged, it should be assumed that the battery has reached the end of its service life. Please replace it with a new battery.
	Why doesn't recharging end?	The battery pack life has expired.	Replace with a new battery pack. If this is not effective, consult your dealer.
	Why does the ⌑ icon appear?	The remaining battery pack power is low.	Recharge the battery pack.
Shooting	Why does the multi-indicator flash red?	A recorded file is being saved on the card.	Not a malfunction. Wait until the multi-indicator turns off.

English **34**

	Question	Answer	Action
Shooting	Are the settings retained even after the camera is turned off?	—	The settings are retained even after the camera is turned off.
	Which resolution setting should I use?	—	Select the resolution setting according to the intended use. 12M, 10M, 5M: Appropriate for printing letter-size or larger, and for printing a close-up of part of a photo (trimming). 2M, 2M: For printing standard photo (photo service) sizes.
Monitor	When used in cold weather, why does the image seem to leave traces as it moves?	Condition due to the monitor characteristics.	Not a malfunction. Spots that appear in the monitor only appear in the monitor and will not be recorded with the images.
	Why does the displayed image contain some red, blue and green dots, or why are black spots visible?		

	Question	Answer	Action
Viewing images	Why is the image too bright?	The subject was too bright.	When capturing an image, devise a way to compensate for a bright subject, for example, by changing the shooting angle.
	Why is there no image (? is shown)?	This may happen when trying to play back images stored on a card from a different digital camera.	Play back images that were recorded on a card using this camera.
	Why is the playback image distorted?	If the subject moves or the camera is moved during recording, a distorted image may sometimes occur.	Not a malfunction. This is a characteristic of the CMOS sensor.
	Why isn't the magnified image clear?	Due to the characteristics of the camera, magnified images appear less clear.	Not a malfunction.
	Can I play back image and sound files that I edited using my computer?	—	We cannot guarantee the accurate playback of files that have been edited using a computer.

	Question	Answer	Action
Viewing images	Why is there a motor-like sound during video clip playback?	The sound of the camera's mechanical action was recorded.	Not a malfunction.
Connecting to a TV	Why is there no sound?	The volume on the TV is set to the minimum.	Adjust the volume on the TV.
Misc.	Why does the "Insufficient card memory" or "Insufficient internal memory" message appear?	There is no more available memory on the card or in the camera's internal memory.	Delete unnecessary files, or use a card that has more memory available.
	Why does the "Card is protected" message appear?	The lock switch on the card is in the locked (protect) position.	Move the lock switch to the unlocked position.
	Why can't the camera be operated?	A temporary internal circuitry problem may be the cause.	Remove the battery pack from the camera, wait a few minutes, then reinstall the battery pack and try again.
	A problem such as inability to record or play back occurs.	The card contains files that were saved using a device other than this camera.	After saving your files to a different medium, format the card.

	Question	Answer	Action
Misc.	Can I use my camera abroad?	—	When the camera is connected to a TV, you can switch the camera's video output to NTSC or PAL. If you have questions about accessories etc., please consult with a dealer near you for advice.
	Why does the "System error" message appear?	A problem has occurred within the camera or card.	Check the following items: ① Remove the card and then install it again. ② Remove the battery pack and then install it again. ③ Install a different card. If "System error" still appears after performing the above steps, then take the camera to the dealer for service.

APPENDICES

OVERVIEW OF THE SETUP MENU SCREEN

The Setup Menu appears when you press and hold the [$\frac{4}{w}$] button for at least 1 second while the camera is on.
Use the arrow keys to select the desired parameter, and press the SET button to display the setting screen for the specified parameter.
The Setup Menu is canceled when the [$\frac{4}{w}$] button is pressed.

SETUP	
VIDEO STABILIZER	①
OPTICAL ZOOM	②
CLOCK SET	③
LANGUAGE	④
TV OUTPUT	⑤
FORMAT	⑥
SET OK	⑦

1 **Photo stabilizer**
  - Compensate for camera shake during video clip recording.
2 **OPTICAL ZOOM**
  - Select whether or not to enable the optical zoom during video clip recording.
3 **CLOCK SET setting**
  - Set the camera's clock.
4 **LANGUAGE setting**
  - Select the language in which the monitor messages are displayed.
5 **TV OUTPUT setting**
6 **FORMAT**
7 **Remaining battery power indication**

SPECIFICATIONS

Camera

Recorded image file format	**Still images:** JPEG format (DCF, DPOF, Exif 2.2 compliant) Note: Designed mainly by the Japan Electronics and Information Technology Industries Association (JEITA), DCF (Design rule for Camera File system) is standard for digital still camera image files to provide interoperability between digital photography devices for the images stored on removable memory cards. However, it is not guaranteed that all devices will support the DCF standard. **Video clips:** ISO standard MPEG-4 AVC/H.264 (.MP4) Audio: 48 kHz sampling, 16bit, 2ch, AAC compression
Data storage media	Internal memory: Approx. 80 MB SD Memory Card SDHC Memory Card (up to 32 GB) SDXC Memory Card (up to 64 GB)
Image sensor/ camera effective number of pixels	1/2.33-inch (1.1 cm) CMOS sensor 10.7 mega pixels Still images: Approx. 10.0 million pixels Videos (HD mode): Approx. 8.3 million pixels Videos (SD mode): Approx. 10.0 million pixels

Still image shooting mode (recording resolution)	12M : 4000 × 3000 pixels (approx. 12 million pixels) 10M : 3648 × 2736 pixels (approx. 10 million pixels) 5M : 2592 × 1944 pixels (approx. 5 million pixels) 2M , 2M▄ : 1600 × 1200 pixels (approx. 2 million pixels)
Video clip recording mode (recording resolution)	Full-SHQ : 1920 × 1080 pixels, 30 fps (30p) HD-HR : 1280 × 720 pixels, 60 fps (60p) HD-SHQ : 1280 × 720 pixels, 30 fps (30p) TV-SHQ : 640 × 480 pixels, 30 fps (30p) • The 60 fps frame rate of this camera is 59.94 fps, and the 30 fps frame rate is 29.97 fps.
White balance	Full-auto TTL
Lens	Focal length: f = 6.3 mm to 18.9 mm, Optical 3× zoom Open: F = 3.1 (wide) to 5.9 (tele) 5 groups, 6 elements (4 aspheric elements, 6 aspheric surfaces) 35 mm film camera conversion Still image shooting: 36 mm to 108 mm (Optical zoom 3×) Video clip recording: 37 mm to 111 mm (Optical Zoom 3×)
Exposure control type	Programmable AE
Light-measuring mode	Multi-section measuring
Range	10 cm (3.94 in.) to infinity
Digital zoom	For shooting: 1× to approx. 4×
Shutter speed	Still image shooting mode: 1/2 to 1/1,500 sec. (During flash: 1/30 to 1/1,500 sec.) Sequential shots mode: 1/15 to 1/1,500 sec. (no flash) Video clip recording mode: 1/30 to 1/10,000 sec.

Sensitivity	Still image shooting (standard output sensitivity*)/video clip recording mode:
	   Auto (video clip recording: ISO 50 to 800; still image shooting: ISO 50 to 400)
	   • Sensitivity measured in compliance with the ISO standard (ISO 12232:2006).

Minimum subject illumination	14 lux (1/30 sec.)

English **42**

Image stabilizer	Video: Electronic Still image: Multi-calculation electronic	
Monitor	2.0 inch Low-temperature polysilicon TFTcolor screen LCD, Approx. 150,000 dots	

Flash working range	GN = 5.5
	   Approx. 50 cm (19.69 in.) to 3.5 m (11.48 ft.)
	   (wide)
	   Approx. 60 cm (23.62 in.) to 1.9 m (6.23 ft.) (tele)	

Flash modes	Auto-flash, forced flash, flash off, red-eye reduction	
Focus	Auto (9-point AF)	
Self-timer	Approx. 2-second delay, 10-second delay	
Ambient environment	Temperature	0 to 40 °C (32 to 104°F) (operation) –20 to 60 °C (–4 to 140°F) (storage)
	Humidity	30 to 90% (operating, no condensation) 10 to 90% (storage, no condensation)
Power supply	Battery pack (supplied)	Li-ion battery pack (DB-L80) ×1
Power consumption		3.4 W (When using the Li-ion battery during recording)
Dimensions (excluding protrusions)		63.1 (W) × 22.0 (D) × 110.8 (H) mm 2.48 (W) × 0.87 (D) × 4.36 (H) in. (Maximum dimensions) Volumetric capacity: Approx. 104 cc
Weight		Approx. 122 g (4.3 oz.) (including battery pack and card) Approx. 105 g (3.7 oz.) (camera only [without battery pack and card])

Camera connectors

USB terminal	Dedicated regrouped jack
	USB 2.0 High Speed
mini HDMI terminal	Video output Total number of scan lines (effective number of scan lines): 750p (720p)/1125i (1080i)/525p (480p) Audio output: L-PCM 48 kHz sampling

Battery life

Shooting	Still image shooting mode	Approx. 170 images: CIPA standard (when a SanDisk 2 GB SD Memory Card is used)
	Video clip recording mode	Approx. 65 minutes: Recorded in ![Full-SHQ] mode
Playback		Approx. 240 minutes: Monitor on, continuous playback

- Until battery pack runs out when using a fully charged battery pack at a 25 °C (77 °F) ambient temperature.
- The operation time may vary depending on the conditions of the battery pack and the conditions of use. Especially when used at temperatures below 10 °C (50 °F), the battery pack operation time is significantly reduced.

APPENDICES

Possible No. of Images/Possible Shooting Time/ Possible Recording Time

Shooting/ recording mode	Resolution setting	Internal Memory	SD Memory Card	
			8 GB	16 GB
Still image mode	12M	21 images	2,000 images	3,910 images
	10M	25 images	2,390 images	4,670 images
	5M	50 images	4,690 images	9,160 images
	2M	124 images	11,300 images	22,700 images
	2M	124 images	11,300 images	22,700 images
Video clip mode	Full-SHQ	53 sec.	1 hr. 26 min.	2 hr. 48 min.
	HD-HR	1 min. 8 sec.	1 hr. 52 min.	3 hr. 38 min.
	HD-SHQ	1 min. 8 sec.	1 hr. 52 min.	3 hr. 38 min.
	TV-SHQ	3 min. 16 sec.	5 hr. 18 min.	10 hr. 22 min.

- The continuous recording time of a video clip is approximately 30 minutes.
- The above values apply when an SD Memory Card by SanDisk is used.
- Even with cards of the same capacity, the amount of data that can actually be stored may differ depending on the card brand, etc.
- The continuous shooting time for each video clip will differ depending, for example, on the card capacity, environmental conditions (temperature and shooting conditions, etc.).

Concerning the multi-indicator

The camera's multi-indicator will light, flash, or be off, depending on the different camera operations.

Multi-indicator status		Camera status
Lit		Connected to a computer Charging
Flashing	Slow	Battery charge error or rise in internal temperature
	Slow/Fast	During sleep mode
	Fast	Connected to a computer Connected to a TV
	Very fast	Accessing card

Supplied Li-ion battery pack

Model number		DB-L80
Voltage		3.7 V
Capacity		700 mAh
Ambient environment	Temperature	0 to 40 °C (32 to 104 °F) (during use) –10 to 30 °C (14 to 86 °F) (storage)
	Humidity	10 to 90% (no condensation)
Dimensions		39.2 (W) × 5.9 (D) × 31.4 (H) mm 1.54 (W) × 0.23 (D) × 1.24 (H) in.
Weight		Approx. 15 g (0.5 oz.)

APPENDICES

English **46**

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- All images and illustrations given in this manual are for explanation purposes and may differ slightly from that of the actual product. Also, actual specifications are subject to change without prior notice and therefore may differ from the contents of this manual.

Before capturing those important shots, be sure to first take a test shot to confirm that your camera is set up and ready to go

- Sanyo Electric shall not be held responsible for any problems resulting from the use of this camera.
- Sanyo Electric declines all responsibility for damages due to improper use of the camera, failure to adhere to the instructions given in this manual, or repairs or changes done by those other than a technician authorized by the manufacturer.
- Sanyo Electric shall not be held responsible for any damage caused by optional devices or consumable items used with the camera other than those supplied with the camera or those specified by Sanyo Electric.
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- The images captured with this camera will differ in quality from pictures taken with a standard film camera.

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